

Mr. JOHN GLASS, the Surgeon of *Baglipur*, sent, in the beginning of this century, some of the *Arrindy* silk home, and he wrote :

“ I understand that some manufacturers to whom it was shown seemed to think that we had been deceiving them by our accounts of the shawls being made from the wool of a goat, and that this silk if sent home would be made into shawls equal to any manufactured in India.”

This will be sufficient to show the importance of this article, and that it merits highly the attention of the paternal Government of India, and of all patriotic institutions, particularly of the Asiatic Society in *Calcutta*, which has done hitherto so much for the promotion of science and knowledge, and consequently for the welfare of all nations.

V.—*Concerning certain interesting Phenomena manifested in individuals born blind, and in those having little or no recollection of that sense, on their being restored to sight at various periods of life. By F. H. BRETT, Esq. Med. Serv.*

When the profound and discerning Mr. LOCKE in his *Essay on the Human Understanding* asserted that ideas were not innate, he meant, no doubt, that so far as the mind's intercourse, in its present condition, with all objects submitted to it was concerned, its noble faculties were destined to be educated only by its legitimate objects of excitation through the medium of the senses appointed for that purpose. His eccentric comparisons of the mind to a dark room, a blank sheet of paper, &c., meant in reality nothing further.

It occasionally happens that in the course of very extensive practice we have opportunities of illustrating this, in cases of restoration to sight of persons born blind, and also in cases of individuals who have known and distinguished colors; and “ then (as Mr. LOCKE expresses it) cataracts shut the windows,” and if restored to sight many years afterwards, they are in precisely the same situation as though they had never seen before, having not the slightest recollection or idea of colors any more than the individuals born blind. All is to be acquired “ *de novo*.”

I will particularize the following from amongst several which have occurred to me, as they may probably appear interesting to the Society when divested of all purely professional or surgical detail, which have already indeed been communicated to the profession.

No. 1.—The following is illustrative of the fact of all ideas of objects and colors having to be acquired, as well as a verification of the problem

contained in the 8th Section of the 2nd Book of Mr. LOCKE in his chapter on Perception. “Suppose a man born blind, and now adult, and taught by the touch to distinguish between a cube and a sphere of the same metal, and suppose the cube and the sphere placed on a table, and the blind man be made to see; (quære: whether by his sight before he touched them he could now distinguish and tell which is the globe and which the cube?) to which the acute and judicious proposer answered—No.”

A pandit, 18 years of age, native of Saugor, was born blind; his mother states that she had kept him in a dark room until the 10th day of her confinement, when on taking him to the door and exposing his eyes to the light, she discovered the pearly appearance of the pupils peculiar to cataract, and that he has always been blind. He is intelligent and cheerful, and has been in the habit of finding his way about Saugor and the adjoining country for many years, frequently singing, of which he is very fond. He had little or no inclination to undergo the operation,—at least not sufficient to overcome the fear which he entertained. He could perceive the light, and had acquired the habit of rotating the head constantly in progression in a regular and curious manner to the right and left, with a view, I imagine, of admitting the light to the retina obliquely between the circumference of the cataract and the under edge of his iris. It was a long time before his relations could persuade him to submit to an operation. He had requested to be taken to me some months previous; was gratified at being told that he might be made to see like other people; but the slight inconvenience attending the introduction of a few drops of the solution of belladonna into the lids, and my holding the lids to try how they should be supported, annoyed him—and he said he would much sooner go home and eat his dinner. “What do I want with being restored to sight?” His mother likewise expressed her disbelief as to a person born blind being made to see. The principal pandit of the *muhallah* at length overruled the objections. The operation was performed on the 28th of August. He complained of but little pain, and indeed there was scarcely any inflammation whatever produced by the operation. He immediately became conscious of a considerable increase of light.

The eye-balls, as in all cases of congenital cataract, moved about without any control, which, together with a very prominent brow and much spasmodic action of the lids, offered some obstacles. So little irritation had occurred, that I operated on the 30th August on the left eye, which resembled the former operation in every particular. No inflammation followed, but the right eye had become inflamed, in

consequence of which his eyes remained bandaged for several days, and it became necessary to bleed him. He expressed himself as sensible of a remarkable change having taken place: the light was most distressing to him, and continued so for some time. On the eighth day the absorption had proceeded very satisfactorily: several substances of various colors were presented to him. He could not recognize any of them, until he had made himself acquainted with them by the sense of touch. He brought them very close to his eyes, moving his head in his accustomed peculiar manner. Whatever he attempted to reach, he always missed his aim. He expressed himself as highly gratified, and confident that he would see and know every thing, but did not like too much interrogation. On the 12th day he came to me again. The eye-balls were no longer rolled in their former vacant manner. He had acquired the power of directing the left eye, which had been most instructed, on objects; the right eye, from inflammation, having remained bandaged. A lady shewed him her shawl: he said it was red, which was correct; but did not know what it was, until examined by the hand. The platform in front of the house was recognized as green, and his mother said he had been examining many things at home. The absorption of the cataract has proceeded, leaving two-thirds of the pupil of the left eye quite clear; some inflammation still in the right. He said he was no longer afraid of me, and that he would submit to any thing I recommended. On the 16th of September he walked from the town to see me, accompanied by his mother. He had gained much information during his absence. The pupil of the left eye had become almost entirely clear. He said he had seen a great number of trees on the road, the lake, and a buggy passing by. He had made himself acquainted with several things. What is this?—A lota. This?—A pawn leaf. Which answers were correct. A small hooka was shewn him: he touched it, and was told what it was; several things were then presented to him and the hooka was again brought. He observed, "I cannot tell; you have submitted so many things to me, that I am confused, and forget their names." He felt it and then exclaimed, it is the same hooka. Presently it was shewn him a third time; he recognized it after having carefully viewed it from top to bottom without touching. He observed a book, remarking that it was red; but he knew not that it was a book until told so. It was presented to him a few minutes afterwards, and he recognized both the color and the book. He said he was extremely happy and gratified with all he saw. He followed me with his eyes as I moved about the room, and pointed out the different positions I took. He



recognized distinctly the features of his mother's face. She hid it under her chadder; he laughed, and observed that she had done so, and turned his face away. He said, "I can see every thing; all I want more, is time to learn what they all are; and when I can walk about the town, I shall be quite satisfied." He could not ascertain whether any thing was round or square, smooth or rough. He distinguished the following: some partridges, the cage and the cup containing the water. The color of their plumage he correctly stated; also the windows, the fields, the sky, a child in arms, &c. On the 7th he again came to see me. He pointed out every feature in his mother's face, her hair, the color of her dress, the different distances and positions which she purposely took, and when changing places with another woman, selected her out. He stated that if I would bring the red book I shewed him yesterday, he would recognize it. I accordingly brought him a red morocco box much resembling the book, but smaller; he said it was the book! At this period his knowledge of the shapes of bodies and their sizes was very imperfect, especially the latter. He directed his hand straight to whatever things were now presented before him. The last time I saw him, a small ivory looking-glass, a paper-cutter, and a cut jelly-glass, were placed on the ground; they were shifted and changed, and he distinguished each respectively. He was much amused and laughed heartily. I gave him the looking-glass, in which he noticed his face, and said it was like other people's, *achchha*.

It will appear, therefore, that his judgment of distances, colors, notions, and positions, was very considerable. That of size and form was to be acquired more tardily.

From this period I quitted Saugor, and have heard nothing further of him.

No. 2.—The next is a similar instance of an individual who had never seen before,—a Brahman boy of 10 years of age, residing at the *Kherie Pass*, near the *Dehra* valley.

A few days after the first operation when the bandages were removed, the principal circumstance worthy of note was the confusion and embarrassment of the mind, arising from new and unaccustomed impressions and the dazzling influence of light.

On the seventh day he had acquired some voluntary power over the ball of the eye, being able to steady it somewhat, and fix it on any object he wished to discern, but only for a few moments. He had after repeated practice acquired a knowledge of most colors, but it was not until the twenty-sixth day from the first operation that he could be said to have a tolerable acquaintance with the visible world. Dur-

ing this period, when the absence of pain and inflammation permitted, (for it was necessary for him to undergo several operations,) the bandages were removed before and after sunset, and his attention was directed to men sometimes standing, sometimes moving; also to the tent, sky, trees and their foliage, animals of different kinds, the colors and figures and motions of which he was able in time to discern.

There was no correspondence, however, for a long while between the sight and touch, neither did he for several days direct his eyes straight to objects so as to examine them minutely. At night he would contemplate the stars, and the flame of a candle, and the features of my face, &c. Debility, the necessary result of the treatment, &c. in a delicate frame, was one cause of the slowness of progress. As he gained strength by an improved diet, his vision greatly improved.

He was observed to take up various objects and notice them; latterly I was in the habit of calling him into my tent when at breakfast. He noticed the cups and saucers and their patterns; chintz on the canvas; and he observed attentively a hooka, describing the bell (cut glass) as bright; noticed the snake, and mouth-piece (silver), and saw distinctly the smoke ascending.

On the 20th of December he walked several yards without assistance. A lady gave him a colored chintz cap, with which he was much pleased, and he distinguished on it the colors of green and red, and the white ground. As his new sense could scarcely be said to have been exercised more than fourteen days, further observations could not be made as to his judgment of distances, positions, forms, and motions.

No. 3.—A similar result, as far as phenomena, occurred in a boy of 12 years of age, though his acquirements were more rapid, from his natural mental intelligence being superior to the former cases: the cause of his blindness was disease after birth from the small-pox. The nature of the operation being the formation of an artificial pupil at the outer corner of the eye, it is unnecessary to repeat the details which are so similar to the preceding, and though he had seen for some weeks of his early existence, of course he had to acquire all '*de novo*.'

No. 4.—There are others who have been restored to sight who had lost it at a more advanced period of life—say five or six years of age and upwards, and when restored exhibit peculiar phenomena more or less interesting in proportion to the degree of remembrance they may possess of their former vision. And this was particularly remarkable in a young man of 25 years of age, the brother of the boy mentioned in case No. 2, who had become blind when only 5 years

old; and which is remarkably interesting in a physiological point of view, as shewing the power of the retina to preserve its susceptibility to light for twenty years, though not the only case recorded. There was certainly in this case a great approximation to the phenomena manifested in congenital blindness, but there was not that marked ignorance in recognising objects at first sight, nor that palpable want of correspondence between the touch and sight, but both existed to some extent. It was also curious that he should become blind after five years of the same disease with which his brother was born blind.

I recollect restoring a man, aged 35 years, who had been blind for a period of twelve years from the venereal disease, causing closure of the pupils. This man, after an operation for artificial pupil, recognised, of course, every thing perfectly the moment he was permitted to look about him, and still enjoys a very tolerable share of vision at *Cawnpore*.

VI.—*Memorandum of the progress of sinking a Well in the bunds of Chandpur, near the foot of the Hills. By Mr. WILLIAM DAWE, Conductor, Delhi Canal Department.*

In sinking wells through the soils, without and within the lower range of hills, I have seen repeated failures owing to the usual mode adopted in digging for the water, (i. e. with perpendicular sides;) and as I was only about 400 yards from a branch of the *Jumna*, the level of its water about 14 feet below the surface of the top of the proposed well, I calculated upon finding water at 20 feet deep at the utmost. I therefore commenced digging 42 feet diameter, contracting as I sunk, and this admitted of leaving a couple of winding steps to bring up the contents by basket loads, in preference to being drawn up with a drag-rope, (which method could not well be adopted, the top excavation being so wide.) At the depth of 24 feet I was apprehensive that the work would have been a failure, owing to the vast accumulation of heavy boulders, from 4 to 10 maunds weight, which I had no purchase to get up. This obstacle was got over by the simple method of expending one for every step of the winding roadway, always taking the precaution of letting the boulders sufficiently into the bank to prevent the possibility of their falling down on the work-people below. By this method down as deep as 37 feet the boulders were expended as we came on them, and as the soil there had a more favorable appearance for working, and there was a probability of soon getting water, and the space had become so contracted,